

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU03/00716

A. CLASSIFICATION OF SUBJECT MATTER		
Int. Cl. ⁷ : C07C 43/205, 49/84, 65/24, 309/60, 309/75, 309/47, 69/94, 57/50, 205/59, 323/43, 215/50, 219/22, 69/76, 211/57, 43/23, 43/225, 255/37, 65/28; C07D 319/22; A61K 31/075, 31/12, 31/185, 31/192, 31/205, 31/216, 31/255, 31/277, 31/357; A61P 25/00, 29/00, 31/00, 35/00, 37/00, 43/00		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) STN Substructure and keyword search: mif, macrophage, cell, cancer, tumor? sepsis, cytokine, autoimmune, inflamm?; STN File CA substructure, molecular formula and chemical name searches in regard to claim 41		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	NL 6809942 (SYNTEX CORPORATION) 14 January 1970 See page 2, page 18 line 17 drawings	1-17, 19-40
X	US 3562336 (NELSON, P H et al) 9 February 1971 See formulas II, IV, V; examples 1-5, claims 1-4	1-17, 19-40
X	DE 2051012 (SYNTEX CORP) 20 April 1972 See page 1 lines 14-15, page 14 lines 17-18; formula (I)	1-17, 19-40
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C <input checked="" type="checkbox"/> See patent family annex		
* Special categories of cited documents:		
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	
"P" document published prior to the international filing date but later than the priority date claimed		
Date of the actual completion of the international search 25 August 2003	Date of mailing of the international search report 20 OCT 2003	
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No. (02) 6285 3929	Authorized officer CHRISTINE BREMERS Telephone No : (02) 6283 2313	

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 2258349 (SANDOZ AG) 7 June 1973 See formulas Ia, IIa, IIc, IId, VI, X, XIII; examples 11 a, 11e-11g, claim 1	1-17, 19-40
X	DE 2329298 (BOTTU S.A.) 20 December 1973 See formulas I, II claims 1-4	1-17, 19-40
X	DT 2442305 (BEECHAM GROUP LTD) 13 March 1975 See formulas I-V, XVI, XXI; examples 1, 2-9, 11, 13, 15, 16; claims 1, 2	1-17, 19-40
X	US 3904682 (FRIED, J H et al) 9 September 1975 See formulas I, K, L, P, Q, R; examples 1-3, 6-9, 14-30, 32, 34-37; claims 1, 2	1-17, 19-40
X	US 3935273 (FRIED, J H et al) 27 January 1976 See formulas II, III, VII, VIII; prep 1; examples 1-3, 6, 11A, 11B; claims 1-11	1-17, 19-40
X	NL 7512107 (SYNTEX CORPORATION) 30 January 1976 See page 6 lines 5-12 and lines 17 and 25; compounds 10-13; claim 1	1-17, 19-40
X	US 3958012 (FRIED, J H et al) 18 May 1976 See formulas I, II; preps 1-4; examples 1-2	1-17, 19-40
X	US 3969415 (GALANTAY, E E) 13 July 1976 See formulas I, Ia, Ib, V IX, XII; examples 1, 2, 4, 6, 8; claims 1-4, 6, 10-12	1-17, 19-40
X	US 3978124 (FRIED, J H et al) 31 August 1976 See formulas I, III-IV, XI, XIV-XVI, J, K, M, P, Q, R; examples 1, 2A, 2D, 2F, 5, 11, 12A, 12B, 14B, 15, 21, 23, 25, 28	1-17, 19-40
X	US 3994968 (ALVAREZ, F S) 30 November 1976 See formulas V, VII, IX, X-XIV; column 11 lines 3-42, column 13 lines 30-50; examples 6-8, 10, 12-20	1-17, 19-40
X	US 3998966 (FRIED, J H et al) 21 December 1976 See formulas I, III, IX, XI, XIV-XVI, J, K, M; examples 1, 2A, 2C, 2D, 2F, 5, 11, 12A, 12B, 14B, 15, 21, 23, 25; claims 1-25	1-17, 19-40
X	US 4009197 (FRIED, J H et al) 22 February 1977 See formulas I, K, L, P, Q, R; examples 1-3, 6-9, 14-30, 32, 34-37; claims 1-11	1-17, 19-40

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C (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 52-133962 (GRELAN PHARMACEUT CO LTD) 9 November 1977 See formulas I, II, IV	1-17, 19-40
X	PATENT ABSTRACTS OF JAPAN, JP 62-103074 (HAMARI YAKUHHIN KOGYO KK) 13 May 1987 See formula I	1-17, 19-40
X	JP 63-203631 (NIPPON KAYAKU CO LTD) 23 August 1988 See formulas I, III; page 225 compounds (1), (2), page 226 column 2, page 227 compounds (1), (4), (5)	1-17, 19-40
X	EP 279466 B1 (WARNER-LAMBERT COMPANY) 24 August 1988 See compounds (5)-(8); prep 7; examples 7, 14, 16, 32; claim 10	1-17, 19-40
X	EP 284359 B1 (TAKEDA CHEMICAL INDUSTRIES, LTD) 28 September 1988 See examples 9, 17, 20-22, 40	1-17, 19-40
X	EP 286944 B1 (ENICHEM SYNTHESIS S.P.A.) 19 October 1988 See example 1	1-17, 19-40
X	EP 301813 B1 (AMERICAN HOME PRODUCTS CORPORATION) 1 February 1989 See pages 3-4; examples 2, 6, 10; claims 1, 7, 11, 14-16, 18, 20	1-17, 19-40
X	US 4910208 (MISRA, R N) 20 March 1990 See formulas B, C, B', C', XIII-XVIII, XX; examples 2A, 4A, 5B, 5C, 8A, 9A	1-17, 19-40
X	EP 372385 A2 (F. HOFFMANN-LA ROCHE AG) 13 June 1990 See formula XXIII; examples 2-4	1-17, 19-40
X	WO 91/08744 A1 (ABBOTT LABORATORIES) 27 June 1991 See pages 8-11; examples 1, 5-7, 28-43, 45-46; claims 3, 5-6	1-17, 19-40
X	US 5084575 A (KREFT III, A F et al) 28 January 1992 See columns 2-4; examples 1, 10-13	1-17, 19-40
X	US 5208344 A (KREFT III, A F et al) 4 May 1993 See columns 2-4; examples 1, 10-13	1-17, 19-40

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C (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 96/04267 A1 (LABORATORIOS MENARINI S.A.) 15 February 1996 See compounds VII, VIIa-VIIc, XV-XXIV, XXVI-XXVII, XXXV; examples 21A-C	1-17, 19-40
X	WO 97/31006 A1 (GLYCOMED INCORPORATED) 28 August 1997 See pages 27-31, 118; claims 1, 33	1-17, 19-40
X	WO 97/30992 A1 (BRISTOL-MYERS SQUIBB COMPANY) 28 August 1977 See compound 170 and page 144 lines 9-19	1-17, 19-40
X	EP 0818453 B1 (ELI LILLY AND COMPANY) 14 January 1998 See formulas IIIb, IVb; prep 4	1-17, 19-40
X	US 6420375 B1 (&WO 98/37070 A1) (TAKEDA CHEMICAL INDUSTRIES, LTD) 27 August 1998 See example 17; claim 19	1-17, 19-40
X	WO 99/01768 A1 (NYCOMED AMERSHAM PLC) 14 January 1999 See page 8 lines 1-10; claims 6, 10	1-17, 19-40
X	ES 2150848 A1 (LABORATORIOS MENARINI, S.A.) 1 December 2000 See formula VII	1-17, 19-40
X	WO 01/44172 A1 (AXYS PHARMACEUTICALS, INC.) 21 June 2001 See page 3; formulas X, Y	1-17, 19-40
X	Bosca, F et al, "A photophysical and photochemical study of 6-methoxy-2-naphthylacetic acid, the major metabolite of the phototoxic nonsteroidal antiinflammatory drug nabumetone", Photochemistry and Photobiology (2000), vol 71 no 2, 173-177 See Figure 1	1-17, 19-33, 35-40
X	Prabhakar, C et al, "Synthesis and biological activity of novel thiazolidinediones", Bioorganic & Medicinal Chemistry Letters (1998), vol 8 no 19, 2725-2730 See page 2726 third and fourth compounds, page 2727 compound 10	1-17, 19-33, 35-40
X	Bosca, F et al, "New photodegradation pathways for Naproxen, a phototoxic non-steroidal anti-inflammatory drug", Preliminary Note in Journal of Photochemistry and Photobiology A: Chemistry (1990), vol 54 no 1, 131-134 See page 131 compounds 1a-1j	1-17, 19-40

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C (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Hiyama, T et al, "A facile, practical synthesis of 2-(6-methoxy-2-naphthyl)propenoic acid", Bulletin of the Chemical Society of Japan (1990) vol 63 no 2, 640-2 See compounds 1-8	1-17, 19-40
X	Harusawa, S et al, "A new synthesis of some non-steroidal anti-inflammatory agents via cyanophosphates", Synthetic Communications (1984), vol 14 no 14, 1365-1371 See Scheme 2 compounds 5, 7, 8	1-17, 19-40
X	Ray, J E et al, "High-performance liquid chromatographic determination of a new anti-inflammatory agent, nabumetone, and its major metabolite in plasma using fluorimetric detection", Note in Journal of Chromatography (1984) vol 336 no 1, 234-238 See page 234 Figure 1 compounds (II), (IV), (V) and last compound.	1-17, 19-40
X	Cavrini, V et al, "Sintesi di derivati della 2-metossinaftalina come potenziali antiinfiammatori" [Synthesis of derivatives of 2-methoxynaphthalene as potential antiinflammatories], Farmaco, Edizione Scientifica (1982) vol 37 no 3, 171-178 See compounds (I), (II), (IVa) (Va), (VIIa), (IXa)	1-17, 19-40
X	Goudie, A C et al, "4-(6-methoxy-2-naphthyl)butan-2-one and related analogues, a novel structural class of antiinflammatory compounds", Journal of Medicinal Chemistry (1978) vol 21 no 12, 1260-1264 See Scheme I, Scheme II compounds 5, 6, 7, 10	1-17, 19-40
X	US 5268458 A (SPRINGER, H) 7 December 1993 & STN FILE CA Abstract No. 115:282060 See US 5268458 column 11 lines 56 and 68, example A(b)	1-41
X	JP 01076063 (DAINICHISEIKA COLOR AND CHEMICALS MFG. CO.) 22 March 1989 & STN FILE CA Abstract No. 113:162461 See JP 01076063 (64-76063) page 552 compound II-36	1-41
X	EP 123543 (MERCK FROSST CANADA, INC.) 31 October 1984 & STN FILE CA Abstract No. 102:166470 See EP 123543 example 78 Step 1	1-41
X	STN FILE CA Abstract No. 91:91390 & Tetrahedron Letters (1978), vol 52, 5183-5186 See chemical abstract and CAS RN 71056-96-7	1-41
X	STN FILE CA Abstract No. 89:6137 & Kametani, T et al, Yakugaku Zasshi (1987) vol 98 no 2, 146-152 See chemical abstract	1-41

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	STN FILE CA Abstract No. 77:114208 & Journal of Heterocyclic Chemistry (1972), vol 9 no 4, 805-811 See chemical Abstract and CAS RN 37707-72-5	1-41
X	STN FILE CA Abstract No. 71:81118 & Australian Journal of Chemistry (1969), vol 22 no 8, 1721-1730 See chemical Abstract and CAS RN 23818-87-3	1-41
X	STN FILE CA Abstract No. 67:79969 & Journal of Pharmaceutical Sciences (1967), vol 56 no 8, 993-997 See chemical Abstract and CAS RN 17295-11-3	1-41
X	STN FILE CA Abstract No. 64:3950 & Australian Journal of Chemistry (1965) vol 18 no 9, 1351-1364 See chemical Abstract	1-41
X	STN FILE CA Abstract No. 57:10708 & Journal of the American Chemical Society (1962) vol 84, 859-862 See chemical Abstract and CAS RN 73022-40-9	1-41
X	STN FILE CA Abstract No. 51:17182 & Chem. Listy (1956) vol 50, 1610-1616 See chemical Abstract	1-41

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Box I Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos :
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos : 1-40 (all in part)
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
Claims 1-40 are broadly drafted such that a complete search was not economically feasible. The search has therefore been limited substantially to the examples and the compounds as named in claim 41.

The cited documents are only a representative sample of the citations that were found.

3. ☐ Claims Nos :
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

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Information on patent family members

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This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report			Patent Family Member		
NL	6809942/68	NONE			
US	3562336	CH 521935	CH 545264	ES	368572
		IL 32225	NL 6911089		
DE	2051012	NONE			
DE	2258349	BE 792079	GB 1407634	JP	48062743
		NL 7215955	US 3929902	US	4032580
		US 4100300	US 4127658	AU	49429/72
		FR 2162140	US 3969415		
DE	2329298	BE 800510	CH 573897	FR	2187319
		GB 1395124	JP 49069645	NL	7308001
DE	2442305	AU 73136/74	BE 819794	CH	599090
		CH 603523	CH 603524	CH	603525
		CH 603526	CH 603527	CH	613932
		CY 1082	CY 1083	DK	4776/74
		DK 2360/80	DK 1193/84	FR	2242972
		HK 561/80	HK 562/80	JP	50053359
		JP 58090526	JP 58096036	JP	58113142
		KE 3081	KE 3082	MY	197/81
		MY 198/81	NL 7412060	SE	7411261
		SE 7907064	US 4061779	US	4420639
		ZA 7405441	CH 603543	GB	1476721
US	3904682	CA 960689	CA 991655	CH	517690
		CH 520644	CH 520645	CH	537369
		DE 1668654	DE 1793825	DE	1793828
		ES 349061	FR 1587861	GB	1211134
		HK 267/76	NL 6800251	NL	7512107
		US 3896157	US 3978116	US	3978124
		US 3980699	US 3998966	US	4001301
		US 4009197	US 4048330	US	4051233
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	DE 2043048	DE 2065420	ES 413265	
	FR 2068541	GB 1297306	IL 33947	
	NL 7004198	ZA 7001177		
NL 7512107/75	CA 960689	CA 991655	CH 517690	
	CH 520644	CH 520645	CH 537369	
	DE 1668654	DE 1793825	DE 1793828	
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	DE 2013641	ES 377843	FR 2035847	
	GB 1299295	NL 7004196	ZA 7001191	
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		US	3873594	US	3960957		
US	3998966	CA	960689	CA	991655	CH	517690
		CH	520644	CH	520645	CH	537369
		DE	1668654	DE	1793825	DE	1793828
		ES	349061	FR	1587861	GB	1211134
		HK	267/76	NL	6800251	NL	7512107
		US	3896157	US	3904682	US	3978116
		US	3978124	US	3980699	US	4001301
		US	4009197	US	4048330	US	4051233
		US	4097674	US	4207241	CH	536805
		DE	2013641	ES	377843	FR	2035847
		GB	1299295	NL	7004196	ZA	7001191
		BE	747812	CA	960668	CH	536803
		CH	559161	CH	559162	DE	2005454
		ES	377393	FR	2035827	GB	1291386
		HK	271/76	IL	33646	MY	48/76
		NL	7004193				
EP	279466	AU	11119/88	DK	840/88	FI	880748
		JP	63222161	NO	880731	NZ	223477
		PH	24687	PT	86785	US	4767776
		ZA	8800385				
EP	284359	AU	13539/88	CN	88101588	DK	1550/88
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		JP	64000077				
EP	286944	IT	1216929	US	5089661		
EP	301813	AU	19209/88	CA	1330999	DK	4262/88
		GB	2207428	JP	1100144	PT	88116
		US	4960892	US	5084575	US	5208344
		US	5250693	CA	1331000	AU	44361/89
		CA	1331001	DK	1175/90	EP	396839
		GB	2231570	JP	2311463	NZ	231255
		ZA	8908291	AU	86171/91	CA	2089262
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		WO	9204325				
US	4910208	CA	1285951	EP	221677	JP	62120348

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		US	4814454				
EP	372385	AU	45977/89	CA	2004696	DK	6155/89
		JP	2202847	NZ	231651	PH	26044
		US	4937373	ZA	8909328		
WO	9108744	US	5032588				
US	5084575	AU	19209/88	CA	1330999	DK	4262/88
		EP	301813	GB	2207428	JP	1100144
		PT	88116	US	4960892	US	5208344
		US	5250693	CA	1331000	AU	44361/89
		CA	1331001	DK	1175/90	EP	396839
		GB	2231570	JP	2311463	NZ	231255
		ZA	8908291	AU	86171/91	CA	2089262
		EP	547148	IE	913128	PT	98880
		WO	9204325				
WO	9604267	NONE					
WO	9731006	AU	21372/97	EP	882057	US	5837689
		US	5750508	US	5658880	US	5789385
		US	5660992	AU	33259/95	CA	2197336
		EP	775151	WO	9605209	AU	58552/96
		CA	2221589	EP	828729	WO	9636627
		AU	21365/97	EP	882034	WO	9730984
WO	9730992	AU	21366/97	BG	102738	BR	9707614
		CN	1214685	CN	1347881	CZ	9802696
		EE	9800262	EP	892797	HU	9902016
		LT	98120	LV	12150	NO	983892
		NZ	330287	PL	328868	SK	1173/98
		US	6011029	US	6455523	ZA	9701621
EP	818453	CA	2206997	JP	10067777		
US	6420375	AU	62296/98	EP	974584	JP	10291981
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WO	9901768	AU	82249/98				
ES	2150848	NONE					
WO	200144172	AU	200121086	CA	2394639	EP	1242366
		US	2002052343				
US	5268458	BR	9007964	DE	3943286	EP	507822
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EP	123453	AU	26464/84	BR	8401592	CA	1216214

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	GB	2137666	JP	59197552	US	4534807
	ZA	8402362				
JP	01076063	NONE				
						END OF ANNEX